

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent Application of)
Stefan KÄDING et al.) Examiner Matthew J. Merklng
Application No. 10/596,616) Group Art Unit 1795
Filing Date: June 19, 2006) Confirmation No. 8463
For: REFORMER AND METHOD FOR)
REACTING FUEL AND OXIDANT TO)
REFORMATE)

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following is presented in response to the Notification of Non-Compliant Appeal Brief issued September 15, 2010 in connection with the above-captioned patent application.

(v) *Summary of claimed subject matter.*

Claim 13

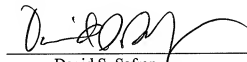
The invention set forth in independent claim 13 relates to a reformer (10, Fig. 1) for converting fuel (12, 14) and oxidant (16, 18, 20) into reformat (22) that has an oxidation zone (24) connected to a supply of fuel (12) and a supply of oxidant (16) and in which the fuel (12) and oxidant (16) are formed into an oxidized mixture. An injection and mixture forming zone (30) is connected between the oxidation zone (24) and a reforming zone (26) and at least a portion of the oxidized mixture (32) from the oxidation zone (24) is mixed with an injected supply of additional fuel (14) in the injection and mixture forming zone (30) and from which the mixture (32) with the additional fuel (14) is supplied to the reforming zone (26) upon an at least partial oxidation of the fuel. Furthermore, the reforming zone is connected to a source of heat

(28) and a portion of the gas mixture (34) is supplied to the reforming zone from the oxidation zone (24) in a manner bypassing the injection and mixture forming zone (30).

Claim 18

The method of claim 18 is directed to the converting of fuel and oxidant into reformat in a reformer having an oxidation zone and a reforming zone, comprising the steps shown in part in the flow chart of Fig. 2, by which fuel (12) and oxidant (16) is supplied to the oxidation zone where it is formed into a mixture (step S01), upon at least partial oxidation of the fuel (16; step S02), at least a portion of the mixture (32) is delivered to an injection and mixing zone (30, step S03) in which the mixture (32) is mixed with an injected supply of additional fuel (14, step S04). The mixture (32) with the additional fuel (14) is then supplied to the reforming zone (26, S05) where mixture (32) is at least partially converting the mixture into reformat using added heat (step S06) and a portion of the mixture produced in the oxidation zone (34) is supplied to the reforming zone (30) in a manner bypassing the injection and mixture forming zone (paragraph [0026], next-to-last sentence).

Respectfully submitted,



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(viii) *Claims appendix.*

Claims 1-12 (Cancelled).

13. A reformer for converting fuel and oxidant into reformat, comprising:
an oxidation zone connected to a supply of fuel and a supply of oxidant and in which the fuel and oxidant are formed into an oxidized mixture;
a reforming zone, and
an injection and mixture forming zone between the oxidation zone and the reforming zone to which at least a portion of the oxidized mixture from the oxidation zone is mixed with an injected supply of additional fuel and from which the mixture with the additional fuel is supplied to the reforming zone upon an at least partial oxidation of the fuel;
wherein the reforming zone is connected to a source of heat; and
wherein the oxidation zone is constructed and arranged to enable a portion of the gas mixture to be supplied to the reforming zone in a manner bypassing the injection and mixture forming zone.

14. The reformer according to claim 13, wherein the source of heat is an exothermic oxidation produced within the oxidation zone.

15. The reformer according to claim 13, wherein the reforming zone is connected to an oxidant supply which supplies additional oxidant to the reforming zone.

16. The reformer according to claim 13, wherein the oxidation zone comprises at least one pipe which is arranged within the reforming zone.

17. (Cancelled).

18. A method for converting fuel and oxidant into reformat in a reformer having an oxidation zone and a reforming zone, comprising the steps of:

supplying fuel and oxidant to the oxidation zone and forming a mixture thereof therein,
upon at least partial oxidation of the fuel, delivering at least a portion of the mixture to an injection and mixing zone in which the mixture is mixed with an injected supply of additional fuel,

supplying the mixture with the additional fuel to the reforming zone,
supplying heat to the reforming zone and at least partially converting the mixture into reformat; and

wherein a portion of the mixture produced in the oxidation zone is supplied to the reforming zone in a manner bypassing the injection and mixture forming zone.

19. The method according to claim 18, wherein the step of supplying heat to the reforming zone is performed with heat from exothermic oxidation of the fuel and oxidant mixture within the oxidation zone.

20. The method according to claim 18, further comprising the step of supplying additional oxidant to the reforming zone.

21. The method according to claim 18, wherein the additional fuel is at least partially evaporated by thermal energy of the gas mixture delivered to the injection and mixing zone from the oxidation zone.

22. (Cancelled).